

FIG.1

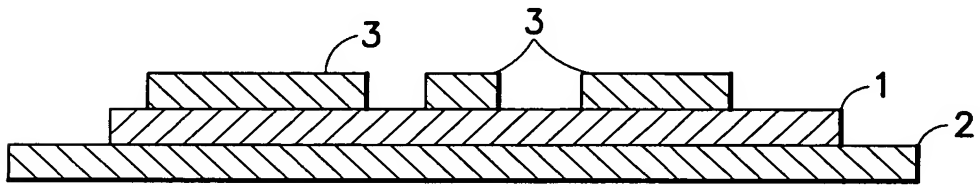


FIG.2

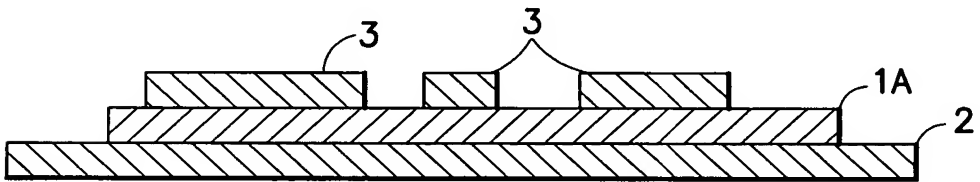


FIG.3a

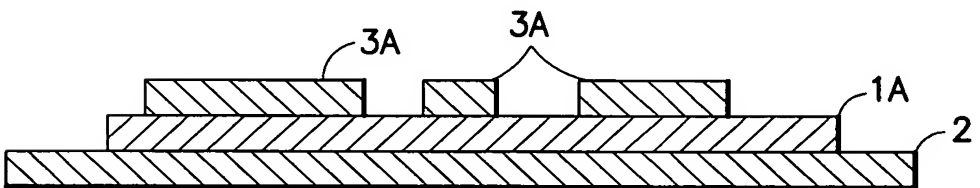


FIG.3b

20160729209001

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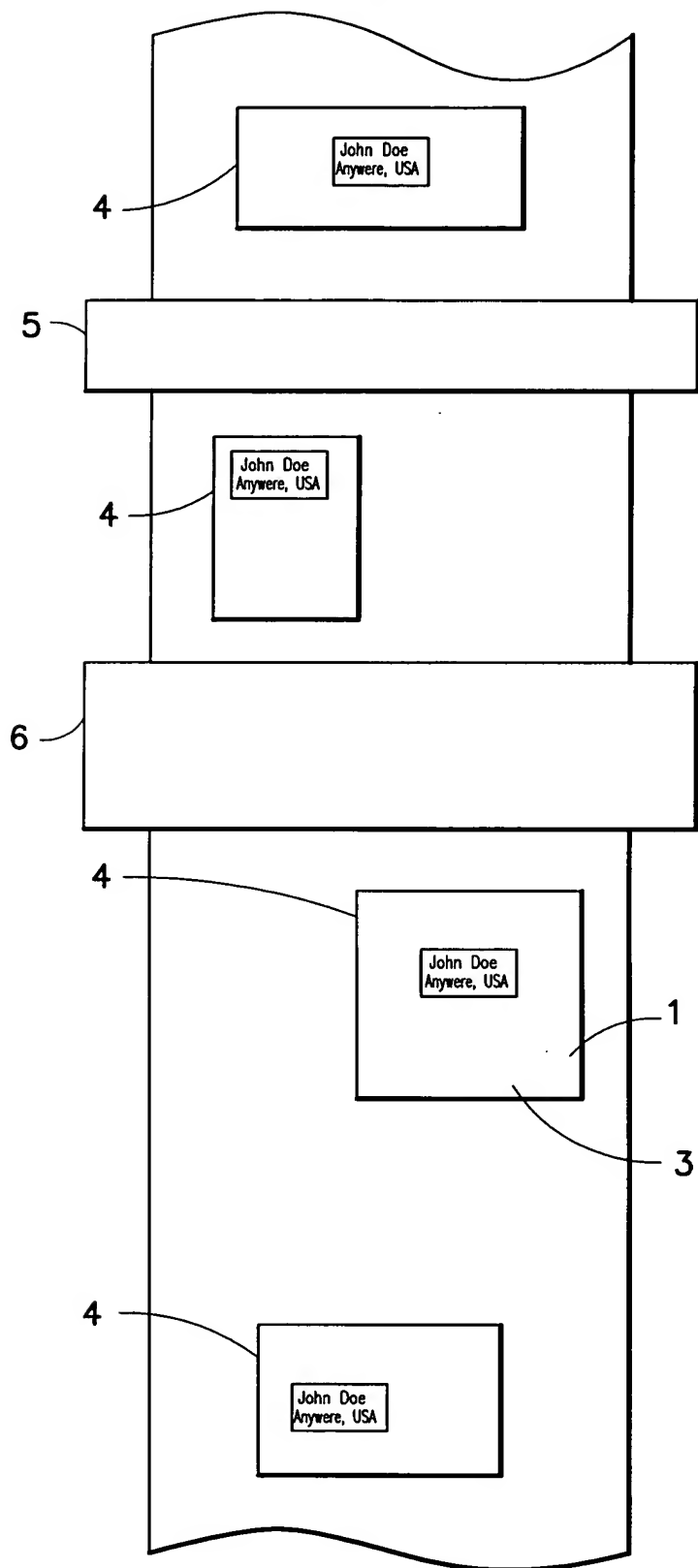


FIG.4

2010407929001

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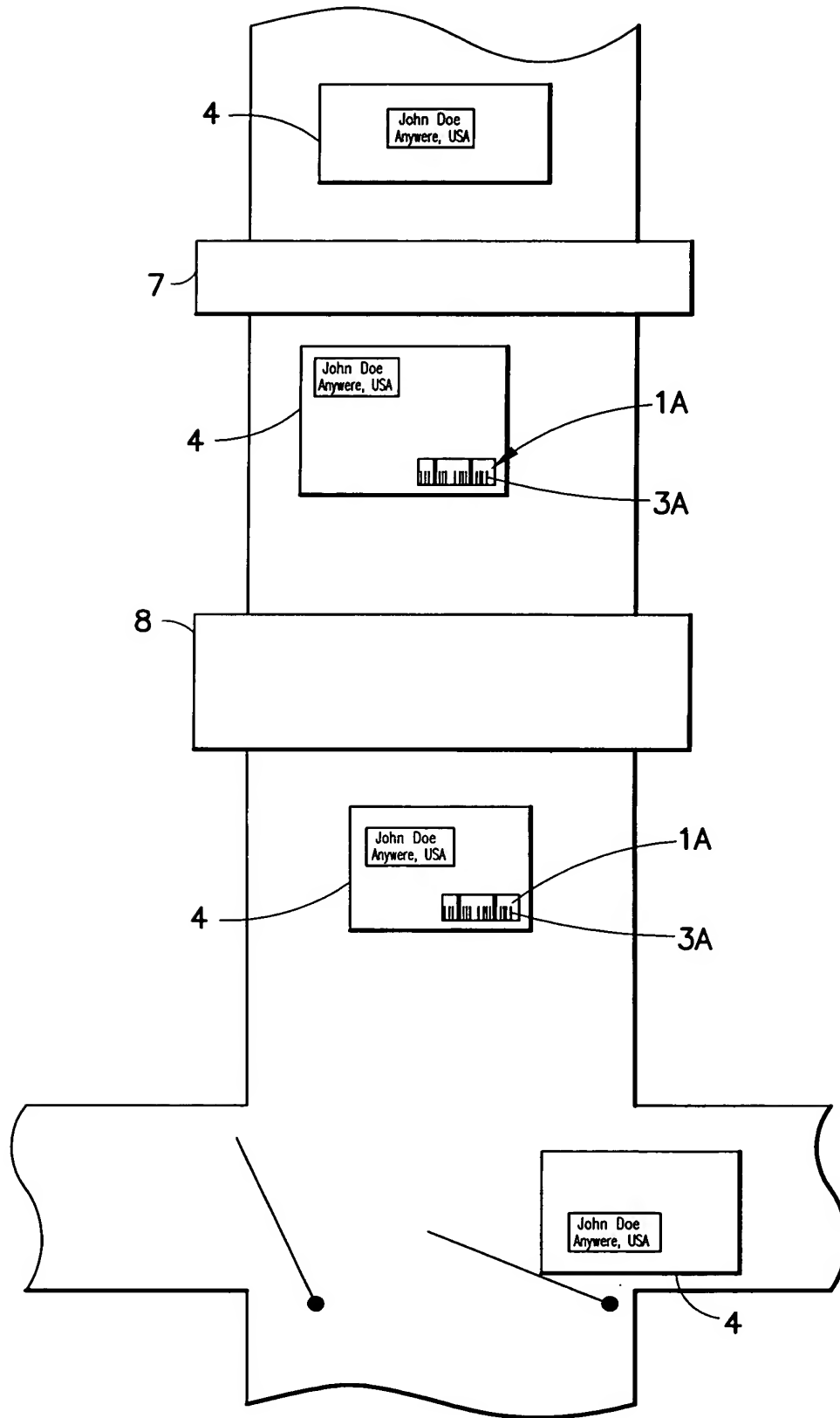


FIG.5

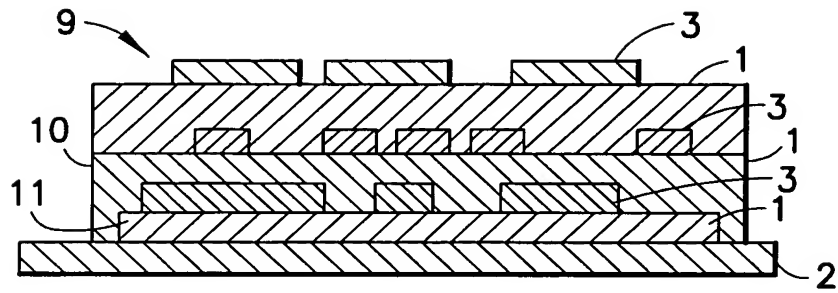


FIG.6

RESPONSE FUNCTION FOR THREE  
THERMOCHROMIC MATERIALS

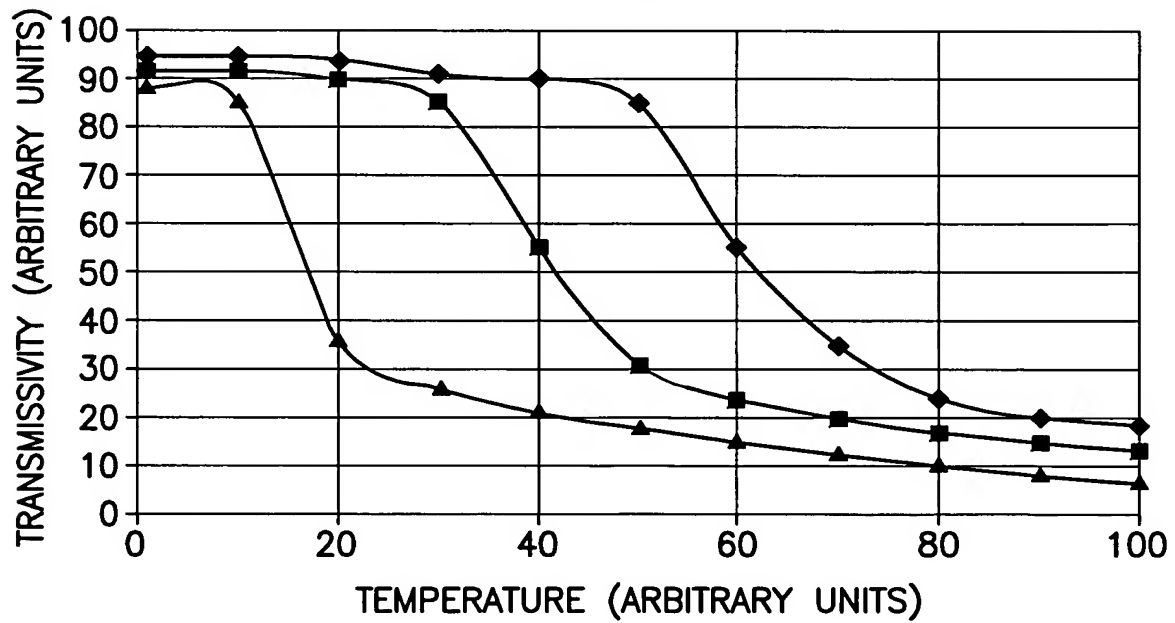


FIG.7

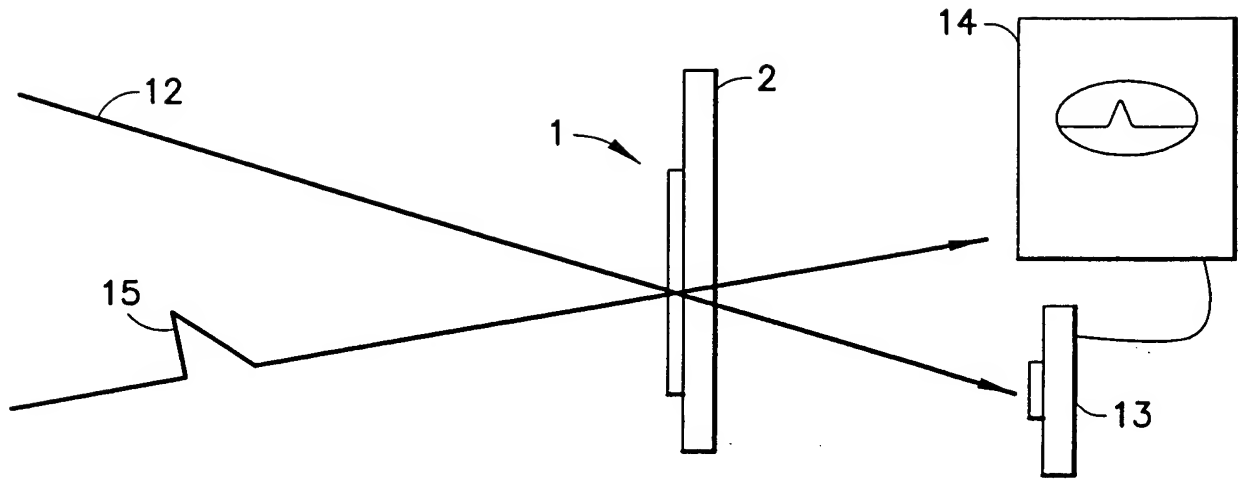


FIG.8

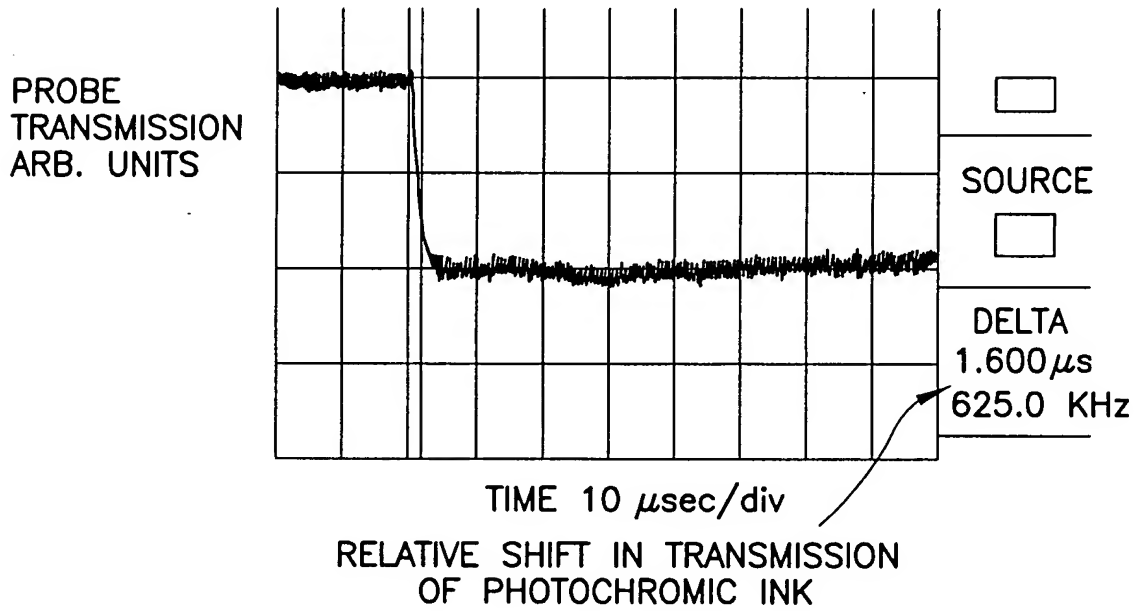
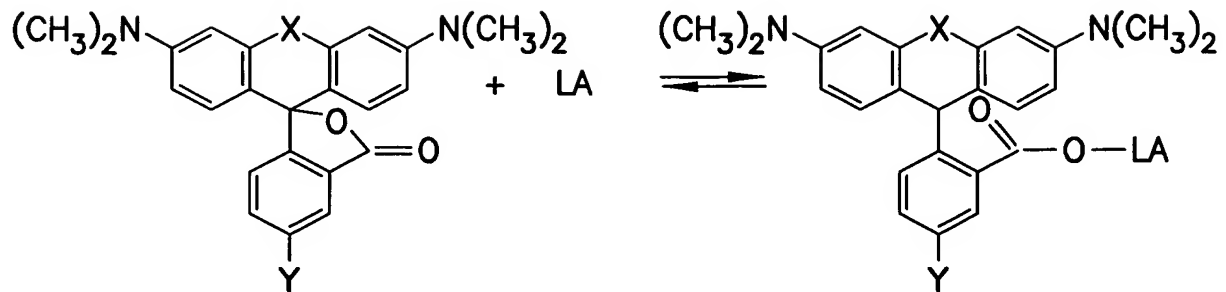


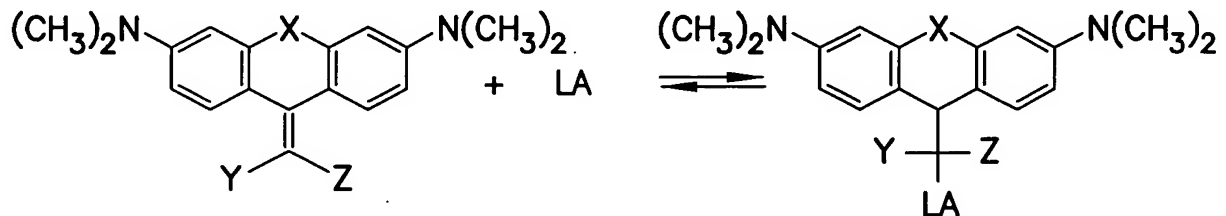
FIG.9



LACTONE (COLORLESS)  
STRUCTURE 1

SCHEME 1

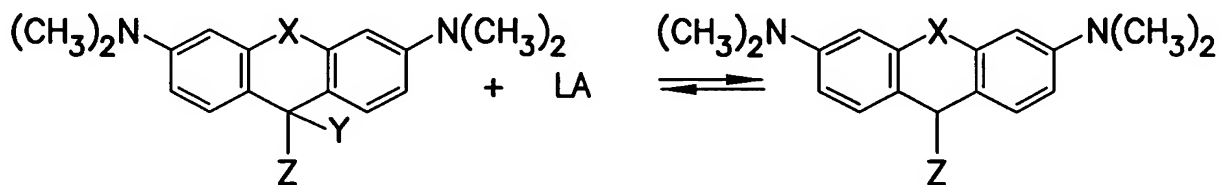
CATIONIC DYE (COLORED)



DIARYLETHYLENE (COLORLESS)  
STRUCTURE 2

SCHEME 2

CATIONIC DYE (COLORED)



Z=alkyl,aryl,ect

Y=OH,Oalkyl,Oaryl

AND OTHER HETEROATOM CONTAINING MOIETIES

DI(TRI)ARYLMETHANE (COLORLESS)  
STRUCTURE 3

SCHEME 3

CATIONIC DYE (COLORED)

FIG.10